

IN THE CLAIMS:

Please cancel claims 11-13 without prejudice or disclaimer, rewrite claims 1, 3 and 10, and add new claims 14-18, as shown below in the detailed listing of all claims which are, or were, in this application:

1. (Currently amended) A real time functional replicator (10) of a specific integrated circuit comprised of a processing unit and peripherals in order to perform specific digital and/or analog functions controlled by specific software, said specific integrated circuit being designed to be incorporated into a specified application board; said replicator device ~~being characterized in that it includes~~ comprising:

a processing module (12) that is functionally identical to said processing unit of said specific integrated circuit,

a plurality of peripheral modules (14, 16, 18) each able to implement one or more digital and/or analog functions, each of said functions being able to be selected separately, and

function interconnection means (20) for establishing the connections between said processing module and one or more digital and/or analog functions previously selected and located in at least

one of said peripheral modules, said functions being identical to said specific functions of said specific integrated circuit, such that said replicator behaves identically to said specific integrated circuit when said specific software is run.

2. (Original) The device according to claim 1, wherein said function interconnection means are included in a standalone module (20).

3. (Currently amended) The device according to claim 2, in which said function interconnection module (20) is connected to said processing module (12) through ~~a so-called~~ an internal bus (28) grouping together the internal connections of said specific integrated circuit between its processing unit and its peripherals.

4. (Previously presented) The device according to claim 2, in which said function interconnection module (20) is configured by a programmable automation (44) using software set up when said digital and/or analog functions, which must be implemented by said peripheral modules (14, 16, 18), have been selected.

5. (Original) The device according to claim 1, wherein said interconnection means are integrated within said peripheral modules (14, 16, 18).

6. (Previously presented) The device according to claim 1, in which said peripheral modules feature one or more integrated circuits (14, 16) each of which are specially designed to implement a plurality of digital and/or analog functions.

7. (Original) The device according to claim 6, in which said peripheral modules also include one or more FPGA type programmable logic arrays (18) which were previously programmed to implement at least one digital function which is not implemented by said integrated circuits (14, 16) specially designed to implement the digital and/or analog functions.

8. (Original) The device according to claim 7, featuring an input/output connection module (22) and an interface (24) connected to said input/output interconnection module by an input/output bus (34) and which can be connected to the input/output pins of the specific integrated circuit in the specified application board,

said input/output interconnection module establishing the connections between the outputs of the digital and/or analog functions previously selected of said peripheral modules (14, 16, 18) and said interface.

9. (Previously presented) The device according to claim 7, in which said input/output interconnection module (22) is configured by said programmable automation (44) by means of said software set up when said digital and/or analog functions were selected.

10. (Currently amended) The device according to claim 1, further including a ROM emulation module (45) connected directly to said processing module (12) to emulate the ROM memory of said specific integrated circuit, said ROM emulation module ~~preferably being a~~ ~~SSRAM memory,~~ having the same type of access and the same access time as said ROM memory.

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (New) The device according to claim 10, wherein said ROM emulation module comprises a SSRAM memory.

15. (New) A method for emulating a specific integrated circuit designed to be incorporated into a specified application board, said method comprising

providing an application board having input/output pins for said integrated circuit,

connecting a device according to claim 1 to said input/output pins.

16. (New) The method according to claim 15, wherein said interface is connected to the input/output pins of said specific integrated circuit by a ribbon cable.

17. (New) A method for testing a prototype of an integrated circuit, comprising providing a device according to claim 1, loading information into processing module (12) from a computer, and testing said device.

18. (New) A method for developing an integrated circuit, comprising providing a device according to claim 1, loading software into processing module (12), and running said software to test interactions between the software and the integrated circuit.